

JOINT EVENT

2nd World Congress on **Wind and Renewable Energy** & 5th World Congress and Expo on **Green Energy**

June 14-16, 2018 | London, UK



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Green energy – Resources, economics and policies

The contribution of green energy sources (hydro, wind, solar, biomass and geothermal) in meeting global electricity demand has increased unprecedentedly over the last six years since 2010. The global electricity demand has increased by 13% from 21.5 Trillion kWh in 2010 to 24.3 Trillion kWh in 2015. During the same period, electricity generation from green energy sources increased by 33%. In fact, the increase in electricity generation from green energy sources for the 2010-2015 period is almost equal to that from the rest of the sources combined (i.e., coal, oil, gas and nuclear). This scale of structural change in the electricity sector was unthinkable a decade ago. Thanks to the global climate change debate and the rapid drop in electricity generation costs of green energy technologies, particularly solar technologies, green energy has now revolutionized electricity supply industry. Besides the rapid increase in cost-competitiveness of renewable energy technologies more recently, government policies are the primary drivers of their scaling up. Almost every country in the world has introduced policy instruments to enhance the deployment of green energy technologies. These policies are of three types: direct investments by the governments as well as the international financial institutions/development partners; fiscal policy instruments, such as concessional tariffs, soft loans, tax credits, production subsidies, and insurance against project risks; and regulatory policies, such as renewable energy portfolio standards, renewable energy certificate schemes. Despite the promising growth, green energy technologies still face some challenges, such as higher costs of some technologies, such as concentrated solar power technologies, offshore wind and biomass technologies for power generation. The intermittency is another big hurdle for the key green energy technologies, solar and wind. Moreover, uneven distribution of green energy sources across the different regions of the world and physical constraint for the long-distance electricity transmission between these regions will remain as a tough challenge to develop green energy only electricity supply system globally. This presentation will cover resource potential, technological options, economics and policy landscape in the context of further expanding the deployment of green energy globally.

Biography

Govinda R Timilsina is a Senior Research Economist at the Development Research Group of the World Bank, Washington, DC. He has more than 23 years' experience across a broad range of energy and climate change economics and policies at the international level. His key expertise includes green energy, climate change policies, macroeconomic and sectoral modeling for policy analysis. Prior to joining the Bank, he was a Senior Research Director at the Canadian Energy Research Institute, Calgary, Canada. At present, he is leading a number of studies including economics of green or renewable energy, carbon pricing, sustainable urban planning.

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